

IN THE DRAWINGS

The attached sheet of drawing includes a change to Fig. 7. This sheet, which includes Fig. 7, replaces the original sheet including Fig. 7. Specifically, the legend "Prior Art" has been added.

Attachment: Replacement Sheet (1)

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-4 and 6-10 are pending in the present application. Claims 8 and 9 have been withdrawn by the Examiner, Claim 5 has been canceled, Claims 1-4, 6 and 7 have been amended and Claim 10 has been added by the present amendment.

In the outstanding Office Action, the drawings were objected to; Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by JP 11209876 (herein “Satoh”); Claims 1 and 6 were rejected under 35 U.S.C. § 102(b) as anticipated by Blackwood et al. (herein “Blackwood”); Claim 2 was rejected under 35 U.S.C. § 103(a) as unpatentable over Satoh in view of Lin; and Claims 3-5 and 7 were rejected under 35 U.S.C. § 103(a) as unpatentable over Satoh in view of Lin and Gurer et al. (herein “Gurer”).

Regarding the objection to the drawings, Figure 7 has been labeled “Prior Art” as suggested by the Examiner. A replacement drawing is included. Accordingly, it is respectfully requested the objection to the drawing be withdrawn.

Claims 1-4, 6 and 7 have been amended and are believed to find support in the drawings as originally filed, for example Figures 4-6. No new matter is added thereby.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by Satoh. This rejection is respectfully traversed.

Amended Claim 1 is directed to a film treatment apparatus that includes a chamber for receiving a substrate pre-coated with a film of a coating solution, a first mass flow controller that supplies the chamber with a first gas including an ammonia gas and a second mass flow controller that supplies the chamber with a second gas. The second gas includes one of a

nitrogen gas and air including a prescribed amount of a water vapor. The film of the coating solution is gelatinized by using the first and second gas.

In non-limiting examples, Figures 4-6 show a chamber 61 for receiving a substrate W pre-coated with a film of a coating solution, a first mass flow controller 37 that supplies the chamber 61 with a first gas (NH₃), and a second mass flow controller 38 that supplies the chamber 61 with a second gas (H₂O/N₂). The film of the coating solution is gelatinized by using the first and second gas.

By providing such a structure, the gelation treatment of the film of the coating solution is efficiently performed and productivity, quality and reliability of the film of the coating solution is improved (see the specification, page 5, lines 2-10).

Referring to Figure 3 of Satoh, Satoh discloses the liquid flow controller 10 that controls the flow rate of the liquid reaction material 5 such as TEOS, SiH₃, metal organic compounds and other metal organic compounds (see Satoh, column 3, lines 20-24, and line 57 to, column 5, line 6). Satoh also discloses the mass flow controller 11 that controls the flow of a purge gas to discharge a non-reacted liquid remaining inside the mist-forming device 4 (see Satoh, column 5, lines 13-20). Satoh further discloses the mass flow controller 11' that controls the flow of a reaction material gas such as ozone containing oxygen gas that undergo chemical reaction on the substrate 2 with the liquid reaction material 5 such as TEOS to form a silicon dioxide film on the substrate 2 (see Satoh, column 5, line 66 to, column 6, line 8). Furthermore, Satoh discloses the mass flow controller 11' that controls the flow of a cleaning gas such as fluorine series gas that remove reaction byproducts deposited on an inner wall of the reaction chamber 1' or contaminants formed as a thin film on the susceptor (see Satoh, column 6, lines 19-37). Moreover, the liquid flow controller 10' that controls the flow of a diluent solvent that reduces the viscosity of the liquid reaction material 5 is disclosed (see Satoh, column 6, lines 37-55). By utilizing the controllers, the apparatus

disclosed by Satoh forms a thin film on a substrate (see Satoh, column 4, lines 36-38). However, Satoh does not disclose that the gases, supplied by the controllers, gelatinize the thin film formed on the substrate. Hence, Satoh does not provide a gelation treatment of the film of the coating solution pre-coated on a substrate and improvements in productivity, quality and reliability of the film of the coating solution. Accordingly, it is respectfully submitted the independent Claim 1 and each of the claims depending therefrom are allowable.

Claims 1 and 6 stand rejected under 35 U.S.C. § 102(b) as anticipated by Blackwood. This rejection is respectfully traversed.

Referring to Figure 1 of Blackwood, Blackwood discloses the flow control 41 that controls the flow of reactive gas such as anhydrous hydrogen fluoride gas, and the flow controls 32, 33 that control the flow of nitrogen (see Blackwood, column 9, lines 35-37, and line 65 to, column 10, line 10). The gases controlled by the flow controls 32, 33, 41 are mixed and flow into the process chamber 12 to carry out an etching process (see Blackwood, column 10, lines 56-66). However, Blackwood does not disclose a film of a coating solution on the substrate being gelatinized by using first and second gas. As such, Blackwood also does not provide a gelation treatment of the film of the coating solution pre-coated on a substrate and improvements in productivity, quality and reliability of the film of the coating solution.

Accordingly, it is respectfully requested this rejection also be withdrawn. Further, since Claim 6 depends on Claim 1, which as discussed above is believed to be allowable, Claim 6 is believed to be allowable as well.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Satoh in view of Lin. This rejection is respectfully traversed.

Claim 2 depends on Claim 1, which as discussed above is believed to be allowable. Further, it is respectfully submitted Lin also does not teach or suggest the features recited in

the independent claim. Accordingly, it is respectfully requested this rejection also be withdrawn.

Claim 3, 4 and 7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Satoh in view of Lin and Gurer. This rejection is respectfully traversed.

Claim 3, 4 and 7 depend on Claim 1, which as discussed above is believed to be allowable. Further, it is respectfully submitted Lin and Gurer also do not teach or suggest the features recited in the independent claim. Accordingly, it is respectfully requested this rejection also be withdrawn.

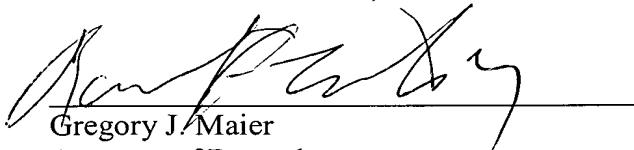
In addition, new Claim 10 has been added to set forth the invention in a varying scope, and Applicant submits the new claim is supported by the originally filed specification. In particular, new Claim 10 is similar to Claim 1, but has been drafted to use means-plus-function terminology. It is respectfully submitted new Claim 10 is allowable for similar reason as claim 1.

Further, it is respectfully requested the Examiner acknowledge as considered the attached Information Disclosure Statement (IDS) containing the references cited in the Japanese Office Action for the present application.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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